Shropshire Botanical Society

Newsletter

Autumn 2023

Shropshire Botanical Society Newsletter No. 47

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Past copies of the newsletter are available as pdfs from the Shropshire Botanical Society website: http://www.shropshirebotany.org.uk

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Our thanks to the Shropshire Wildlife Trust and the Field Studies Council for their generous support of our society. Both organisations support the work of the society in recognition of the importance of the contribution we make to understanding Shropshire botany.

Field Studies Council

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Front Cover:

Annual Beard-grass *Polypogon monspeliensis*
Condover Quarry 17 Sep 23, photo by John Martin

Society News – notes from the Editor

Andrew Perry

It has been another year of extreme weather, with our first meeting, a conifer workshop in March, being cancelled due to snow. We went on to experience the hottest June on record, resulting in many meadows going over much earlier than usual. Following this, a wet July and hot start to September led to a new flush of growth. Nonetheless, we managed to get out and record a host of interesting plants this year, as reported in this issue.

Indoor meetings

We have an indoor meeting on **Sunday 21st January 2024 - at 14:00 at Preston Montford**:

More than Meets the Eye – the wildlife of Grace Dieu, Leicestershire, by Steve Woodward.

Steve Woodward is the joint BSBI recorder for Leicestershire & Rutland and is also the local co-ordinator for six invertebrate groups developing his natural history interest across many taxa. He has a thorough approach to research, biological recording and interpreting data through reports, talks and active involvement with his local museum, records centre and a large number of wildlife groups especially http://www.loughboroughnats.org/more-than-meets-the-eye/ where his latest work is showcased.

His talk will be about his most recent project which has involved a wonderful in-depth study of a local site. The resulting report is a little like Sinker's wonderful flora where the soils, and geology are covered in depth to illustrate the relationship between species and place. The links with Shropshire were maintained through many visits to Preston Montford and discovering links with Darwin on his most recent site project. More than Meets the Eye is a great report with full species lists and interpretation on the wildlife of Grace Dieu in Leicestershire. Steve's photographs, knowledge and holistic approach will have something for everyone - and we can look forward to his accounts of vascular plants that were rediscovered such as Moschatel *Adoxa moschatellina* and Toothwort *Lathraea squamaria* and some rarities such as Bog Pimpernel *Lysimachia tenella*. All species found in Shropshire as we do of course have many landscape features in common between our landlocked counties.

Steve Woodward admiring the fern *Woodwardia*.

Microscopy workshop: Saturday 10th February 2024, Preston Montford. Martin Godfrey will be running a workshop on microscope techniques. All microscopy kit and specimens will be provided - attendees should bring their favourite ID guides and their own lens and forceps if they have them. They are encouraged to bring any specimens which may be puzzling them. Please email mfgodfrey49@gmail.com to book a place on this workshop.

Our **spring meeting will be held on Sunday 28th April at FSC Preston Montford**. Details tbc.

Hand lenses

We'd like to thank Sarah Whild for kindly donating seven high quality hand lenses for use on our field visits. This is a collection of x20 magnification achromatic lenses with varying coloured cords and straps to avoid loss in the undergrowth. Members will be welcome to use the lenses to help with

x20 hand lenses donated by Sarah Whild

identification in the field.

Membership subscriptions – 2024

I will email a reminder to those whose membership subscriptions become due in January 2024 during this December so that you do not need to try and remember whether your subs are due or not. If you have any queries please get in contact with me. Subscriptions can be paid on-line via the society web page's PayPal button or you can send a cheque to the treasurer.

Martin Godfrey
Membership Secretary

Database

Our online database is an excellent resource for searching plant records in Shropshire; you can search for records at a given site name or grid square, or look at the records for a given species. The data search is quick and easy to use, and you can see the records displayed on a map. The website address is: https://flora.shropshirebotany.org.uk/

Obituary – Brian Herring, b.1933 - d.11.04.2023

Mags Cousins

Brian passed away on April 11th, 2023, aged 90 years. He was the much loved Uncle of Margaret, Susan, David and Richard. Brian lived in Malinslee, Telford and the Funeral Service was held on May 15th 2023 at Telford Crematorium Chapel followed by Interment at Newport Woodland Cemetery. Some years ago he had built himself a cardboard coffin which he had used to store books until it was needed. The family requested no flowers but donations were welcomed for the Shropshire Wildlife Trust, showing his love of nature to the end. He was a gentle and principled chap who has been with the Shropshire Botanical Society for decades. He led the way for councils to take on Fair Trade, submitted botanical records regularly and often, in his later years, fell asleep during talks! I remember his fondness for the cakes during refreshments at the Bot Soc indoor meetings.

I discovered from the Nature Volunteering in Lewisham Facebook page, that Brian used to live in the London area and was a volunteer from the mid '80s and '90s there. He was a major contributor to the Lewisham Group of the London Wildlife Trust, British Trust for Conservation Volunteers, Quaggy Waterways Action Group and did many work days across the borough. He returned, endearingly referred to on the Facebook page as "Oop North" to Shropshire in March 2001 where he continued to volunteer for the Shropshire Wildlife Trust and joined the Shropshire Botanical Society.

His 80th birthday was celebrated with the Wrekin Forest Volunteers on heathland in Ketley and he continued to go to work parties well into his eighties, travelling by bus to the sites. Down south, his last volunteering event was in Downham Woodland Walk on 25/3/2001. There are images on the Facebook page, including one where he was presented with a collage of photos of his other efforts. The Nature Volunteering in Lewisham group are thinking of naming a bridge over the river there as 'Brian's Bridge' and putting up a plaque, so clearly he is fondly remembered by them.

VC40 Recorders' Corner

Mags Cousins and John Martin

BSBI England Recorders' Meeting, Preston Montford, 6-8th October 2023

This year the BSBI England Recorders' Meeting was held at FSC Preston Montford, ably organized and chaired by Jonathan Shanklin (BSBI Committee for England). John Martin and Mags Cousins attended along with some other familiar faces of Shropshire Botanical Society, Mark Duffell, John Handley, Sue Townsend, Martin Godfrey and Sarah Whild. These meetings are open to all, not just Vice County Recorders and are an opportunity to network, share top tips, get help with ID on specimens and participate in workshops and training and attend site visits.

Some of the talks were recorded with links on the BSBI website: https://bsbi.org/recorders-conference

Do consider joining these sessions, they are informal and friendly, even though there are the occasional botany geek-out moments, see photo 1. Here the group gathered around a cattle trough at Onslow Park and are inspecting *Lemna* species (Duckweeds). We were feeling enthused after a session from Helena Crouch on this group, where she highlighted the difficulty of identification of native species, but also the number of non-native taxa being recorded in the Britain, for example *Lemna turionifera* and *L.valdiviana* both now recorded from Shropshire, confirmed by Richard Lansdown (rvlansdown@gmail.com) the national referee. Richard is keen that records for *Lemna* and *Wolffia* species are properly confirmed. He can normally carry out determinations from good quality macro (close up) photos, so do email them to him with the usual details for the record and notes on habitat if possible.

Photo 1 Identifying the Duckweeds in a cattle trough at Onslow Park, BSBI Recorders' meeting, by Mags Cousins

BSBI Indoor meetings coming up

British & Irish Botanical Conference 2023, University of Newcastle South Northumberland 2nd December 2023, led by BSBI Events & Comms Team

> Full day of talks on urban botany, research on rare plants and resources for botanists; exhibits, posters, a quiz and flash talks; a demo by Prof John Richards, BSBI Referee for Dandelions; a behind-the-scenes tour of the Natural History Society of Northumbria's archive; Summerfield Books pop-up shop and more. Free to attend, free for exhibitors. More details, programme & booking link here, or contact BSBI Events & Comms Team: meetings@bsbi.org; tel. 07725862957

VC40 Rare plants revisited

So far a total of eight species have been "retrieved" from the list of those presumed extinct since 2005 (Lockton and Whild, 2005), including two remarkable finds this year (see page 16 VC40 County firsts and notable records in 2023):

Saxifraga hypnoides Mossy Saxifrage (1856) - 2023 Snailbeach Lead Mine

Potamogeton gramineus Various-leaved Pondweed (1885) - 2014 in Berrington Pool.

Hippuris vulgaris Mare's Tail (1897) - 2013-2014, 2020 to present in various locations.

Limosella aquatica Mudwort (1962) - most years from 2005 to present especially at Venus Pool.

Cardamine impatiens Narrow-leaved Bitter-cress (1993) - most years from 2007 to 2019 in Clun and Severn tributaries' valley sides.

Hymenophyllum wilsonii Wilson's Filmy-fern (1984)- 2005, 2012, 2014, 2018 all Long Mynd.

Gentianella campestris Field Gentian (1986) - 2023 location witheld.

Potamogeton friesii Flat-stalked Pondweed (2002) – 2014, and 2018 Newport Canal

Two species have been re-recorded since 2005 but may have disappeared again:

Diphasiastrum alpinum Alpine Clubmoss (1991) - 2012 - 2019 at Nipstone. Since then it has been searched for in 2020-23 but not yet found again.

Baldellia ranunculoides Lesser Water Plantain (1996) - 2005 Brown Moss, it has been searched for most years since then but has not yet been found again.

Although it is entirely possible that after further analysis of the records other species may join the rare plant list and even worse the 'presumed extinct' list, it is important to celebrate the above re-appearances. Do keep a look out for the Shropshire rarities, you never know what you might come across. As always, good photos and accurate eight figure grid references will be essential for confirmation of these species, all of which can be submitted to John and myself via iRecord. Happy hunting!.

References

Lockton, A.J. & Whild, S.J. 2005 Rare Plants of Shropshire 3rd Edition, Shropshire Botanical Society.

Field trips

Field Trip Leaders

Benthall Edge Woods

The first meeting of the field season was well attended with fourteen of us keen to see what we could find on the 13th of May. For several, Benthall Edge woods were a new site but for many we were renewing an acquaintance with woodlands we knew would be interesting, and they didn't disappoint. There was some discussion at the very start as to how we determine what should be recorded if it has evidently escaped from the adjacent garden and is dashing along the hedgerow. Winter Heliotrope *Petasites fragrans*, White Comfrey *Symphytum orientale*, Spotted Deadnettle *Lamium maculatum*, Italian Arum *Arum italicum* and Few-flowered Leek *Allium paradoxum*, all having absconded. The latter, *A. paradoxum* is listed on Schedule 9 of the Wildlife and Countryside Act as an invasive species and had made its way from the road entrance to the Hall to the woodland, first recorded there in 1971.

As part of our project to relocate rare plants within Shropshire we were looking for Long-bracted Hawkweed *Hieracium Cinderella*, Wood Barley *Hordelymus europaeus* and Large-leaved Lime *Tilia platyphyllos*, all plants that had featured within Rare Plants of Shropshire (Lockton and Whild, 2005). Not only did we manage to locate and record an example of each of these species (the Hieracium being determined by Dr Kate Thorne) but a lunchtime visit to Patten's Rock Quarry enriched our outing with Early-purple Orchid *Orchis mascula*, Greater Butterfly-orchid *Platanthera chlorantha*, Common Twayblade *Neottia cordata* and Narrow-leaved Meadow-grass *Poa angustifolia*, this last also identified and determined by Dr Kate Thorne was growing on an anthill within the old quarry. Just before we commenced the journey back, we relocated several Bird's-nest Orchid *Neottia nidus-avis*. A wonderful start to the season, we finished the visit by admiring the Water Violet *Hottonia palustris* and Sweet Flag *Acorus calamus* at the pond.

Grateful appreciation to everyone who took part but in particular, Dr Kate Thorne for sharing her knowledge of the site and to Andy Perry for collecting records for three separate monads.

Patten's Rock Quarry. John Handley

Lockton, A.J. and Whild, S.J., 2005. *Rare Plants of Shropshire, 3rd Edition*, Shropshire Botanical Society.

John Handley

Llynclys Quarry

On this trip we got to explore parts of this limestone quarry not open to the public, thanks to Dan Wrench arranging permission from Tarmac. We assembled outside the gates, on 11th June, where we met Shropshire Spider Group who had also been granted access to survey. Dan is familiar with the site from previous conservation work he has been involved with, including spreading green hay from Sweeney Fen. He led us past the working part of the quarry to the areas we were there to survey. A glimpse through the working areas revealed the scale of the quarry and we could see an abundance of Viper's Bugloss *Echium vulgare* on the spoil heaps.

Given the size of the quarry (and the temperature during our June heatwave!) we focused our efforts on the south of the site; a location of some rarities we hoped to re-find. The area has a mix of habitats including pools, wetland and grassland at different stages of colonisation/succession.

Much of the 'wet' ground to the south had dried up which didn't bode well for finding the wetland rarities, but we were pleased to find many rosettes of Marsh Helleborine *Epipactis palustris*, along with some other nice wetland species including Marsh Valerian *Valeriana dioica* and Black Bog-rush *Schoenus nigricans* - the latter being introduced as small plants that appeared to be doing well. We found numerous Common Spotted-orchid *Dactylorhiza fuchsii*, and a hybrid with a Marsh Orchid (*Dactylorhiza fuchsii* × *praetermissa* = *D.* × *grandis*) which was a new record for the site. However, we did not find Marsh Fragrant Orchid *Gymnadenia conopsea* or their hybrid with *D. fuchsii* which had previously been recorded.

Common Twayblade *Neottia ovata*. Andrew Perry

Black Bog-rush *Schoenus nigricans*. Andrew Perry

It was hard to escape the heat in the base of quarry but we managed to coalesce under the shade of a large Goat Willow *Salix caprea* where our companions in the Spider Group shared some of their finds over lunch. An impressive Lunar Hornet Moth *Sesia bembeciformis* was also sheltering in the Sallow; this is a clearwing moth which, as its name suggests, very closely resembles a hornet.

After lunch we explored some of the more permanently dry areas which also yielded some nice plants including Blue Fleabane *Erigeron acris*, Bee Orchid *Ophrys apifera*, Goldenrod *Solidago virgaurea*, Common Twayblade *Neottia ovata* and Carline Thistle *Carlina vulgaris*.

Andrew Perry

Dolgoch Quarry

A small select group of BotSoc members met at Dolgoch Quarry on June 24th. It was a lovely summer day – one of the last before the rainy season started in July, and we walked slowly through the woodland that separates the two areas of calcareous grassland on this site to reach the main quarry. The woods are deciduous on the margins, and an earlier visit in spring had revealed an abundance of ground flora, but the middle of the wood is coniferous, with many trees showing signs of senescence. The large ravines left by the quarrying are colonised by ferns, Hart's Tongue *Asplenium scolopendrium* is abundant. In this dark and rather sinister environment there is little ground flora apart from ferns and so the contrast is dramatic when emerging into the sunlit quarry.

The quarry floor is surrounded by quite steep grassy slopes for much of its area, with a high cliff as the boundary. One end has a large pool where we found both Greater and Lesser Spearwort *Ranunculus lingua* and *R. flammula* on the margins among the Reedmace *Typha* stalks. We looked for Wood Small-reed *Calamagrostis epigejos* (last seen here in 2006) without success, but the wetland adjoining the pool did contain Common Fleabane *Pulicaria dysenterica*, Meadowsweet *Filipendula ulmaria* and several sedges as consolation. The drier areas of the quarry, and the grassy slopes showed characteristic calcareous species including Quaking Grass *Briza Media*, Pyramidal Orchid *Anacamptis pyramidalis*, Yellow-wort *Blackstonia perfoliata*, Agrimony, *Agrimonia eupatoria* and Goldenrod *Solidago virgaurea*. One corner yielded a couple of Bee Orchids *Ophrys apifera*.

A scramble through a rocky tunnel led to a further grassy area where we were delighted to find two of our target rare species; Marsh Helleborine *Epipactis palustris* and Blunt-flowered Rush *Juncus subnodulosus*. Sweeney Fen is very close and has good populations of both these plants but they have not always been found at Dolgoch. The helleborines were present in some numbers and look well established. After enjoying the splendid display of flowers on all sides of the quarry we battled our way up the slope through the scrub and retraced our steps through the wood to the other grassy bank which shows a similar variety of calcareous species. This is a slope in full sun and is much visited by butterflies. A marked feature was the large amount of Restharrow *Ononis repens* at the top of the slope. Mouse-eared Hawkweed *Pilosella officinarum* was also plentiful and *Solidago virgaurea* put in another appearance. This slope is badly affected by Cotoneaster scrub.

The Wildlife Trust is aware of the need to tackle the scrub on the grassy areas. Dolgoch, like other grassland sites in the Oswestry area is not easily grazed and controlling scrub is a persistent task, sometimes done intermittently. The Quarry, both woodland and grasslands sections, is well worth visiting (the woods in spring, and the grasslands in summer) as there is much to enjoy in the varied flora.

Penny Wysome

Nipstone Rock

The group assembled in the Shropshire Wildlife Trust parking area at the foot of Nipstone Rock, despite the slightly dodgy forecast which in the end fortunately didn't deliver any lightning. We were all eager to commence the treasure hunt; the treasure on this occasion were Lycopodiaceae, more specifically the three clubmosses which in 2012 Dan Wrench had found growing in close proximity whilst giving an interview for Shropshire Radio with Genevieve Tudor. Talk about multi-tasking. Even more impressive was at the time Alpine Clubmoss *Diphasiastrum alpinum* hadn't been recorded in that area of Shropshire since the early 1700s; Fir Clubmoss *Huperzia selago* since the 1800s and Stag's-horn Clubmoss *Lycopodium clavatum* since the late 1990s (Shropshire Botanical Society Newsletter Spring 2012 No.24)

Photo 1 Searching the trackside bank under Nipstone Rock for Clubmosses, by Mags Cousins

In 2012, Dan found that all were nestled on a bank beside a forestry track that was disturbed during clearance of trees which took place as part of the Back to Purple heathland restoration project. The three species were regularly seen after Dan's discovery in 2012 and since then the Shropshire Wildlife Trust has been specifically controlling the scrub to provide them with moderate shade and disturbance.

We found the *Lycopodium clavatum* to be very frequent over a good 20 metre section of the very same bank (extending from SO3576597064 – SO3579597056 and SO3581197050 – SO3581997050, photos 1 and 2). Dan managed to re-find just four shoots of *Huperzia selago* (photo 3), probably in the exact same spot but the species has dwindled since the 2012 discovery. We were unsuccessful in relocating *Diphasiastrum alpinum* which has been seen less frequently than the other two species over time until the last record in 2017, perhaps this species has disappeared again.

Eventually the group moved on to record elsewhere and found the lovely dwarf shrub heath species Cowberry *Vaccinium vitis-idaea*, Crowberry *Empetrum nigrum* and Bilberry *Vaccinium myrtillus* and we looked for the hybrid *Vaccinium vitis-idaea* × *myrtillus* = *V.* × *intermedium* which has previously been recorded on site. We carried on recording a nice selection of heath and acid

Photo 2 Stag's-horn Clubmoss *Lycopodium clavatum*, by Mags Cousins

grassland species, including a personal favourite Green-ribbed Sedge *Carex binervis*, up to Nipstone Rock for lunch where the view was outstanding.

After lunch we duly descended to the mires and wet flushes adjacent to the forest road and were rewarded with a good list of axiophytes, including Bog Stitchwort *Stellaria alsine*, Bog Pondweed *Potamogeton polygonifolius*, several sedges including Bottle Sedge *Carex rostrata*, Star Sedge *C. echinata*, Carnation Sedge *C. panicea*, Common Sedge *C. nigra*, the delicate Marsh Willowherb *Epilobium palustre* and leaves of Marsh Violet *Viola palustris*, food plant of the Small Pearl-bordered Fritillary *Boloria selene*. A small population of this butterfly was known to be hanging on at this location and some *V. palustris* plants were plug planted into the mire area to augment the population and boost the food supply for the butterfly, along with reconnecting suitable habitat by felling corridors through the conifer plantation. It is proving successful so far with both mire and butterfly doing well.

Photo 3 Shoots of Fir Clubmoss *Huperzia selago* at Nipstone, by Mags Cousins

Mags Cousins

Earl's Hill

This was another well attended field meeting with fifteen of us willing to climb up Earl's Hill on the 26th of August despite an inclement start to the day. Richard Gulliver provided us with a wonderful introduction to the site. Richard's own interest in Earl's Hill goes back to his days as a lecturer when he established some woodland plots that he has been monitoring since 2005.

We set about the journey to the top, but it wasn't too long before we were waylaid looking at Male Ferns *Dryopteris* spp. and trying to distinguish between them. Shortly after that we encountered Wych Elm *Ulmus glabra* within the woodland and English Elm *U. procera* within a newly planted section of hedgerow, a cause of some discussion. By the time we got to the meadow the rain was starting and we ducked into the woodland below the scree to have lunch and dodge the worst of the rain.

The scree was the main focus of our visit but unfortunately, we failed to locate two of the species we came to seek: Rock Stonecrop *Sedum forsterianum* and Mountain Male Fern *Dryopteris oreades;* although several ferns were checked, nothing decisive was discovered.

After lunch we continued along the path to quite a large population of Meadow Saffron *Colchicum autumnale* fully in flower and looking delightful. We made our way up the slope to try to find Bloody Crane's-bill *Geranium sanguineum* but missed the area where it was located in the past. The path up the side of the hill was steep, but we were rewarded

Earl's Hill, John Handley

with the sighting of a Grayling butterfly *Hipparchia semele* in its ideal habitat and as we reached the summit, we lost the rain and were able to enjoy a sunny time on the top before making our way down through the rather dull conifer plantation.

A bonus was a new site for Grey Sedge *Carex divulsa* that Dr Kate Thorne found and later confirmed.

John Handley

We will report on our September and October meetings in the next newsletter.

Colchicum autumnale, John Handley

Bee Orchid *Ophrys apifera*, by Andrew Perry

Gentians in Shropshire

Mags Cousins

Gentians exert a special pull for botanists, being iconic and beautiful axiophytes of quality habitats, some rare and threatened, and with a complex taxonomy. The latter trait is not a universally endearing quality even for botanists and I am not going to delve into it here as this is well covered by Tim Rich and Andy McVeigh (2019) in the BSBI Handbook No.19 Gentians of Britain and Ireland. This fabulous handbook includes all three genera in Gentianaceae: *Centaurium* (Centauries); *Gentiana* (Gentians); and *Gentianella* which are known as either Felworts and/or Gentians, with Gentianella actually meaning 'little gentian'. The BSBI Handbook goes into depth on the characters to look for when distinguishing species, the morphology, genetics, taxonomy and hybridisation, and provides keys and species accounts.

There are three species of Gentian in Shropshire:

> Marsh Gentian *Gentiana pneumonanthe* L.
>
> Field Gentian *Gentianella campestris* (L.) Börner
>
> Autumn Gentian or Autumn Felwort
> *Gentianella amarella* (L.) Börner

G. pneumonanthe and *G. campestris* were included in Rare Plants of Shropshire (Lockton and Whild, 2005) and indeed the latter was thought likely to be extinct from the county, the last records being over 30 years old, in 1987 by Ian Trueman, until this year. Pleasingly all three species have been recorded in Shropshire in 2023. Field Gentian was fortuitously spotted by Kat White in good numbers at a previously known site in the county. The location is being kept confidential to respect the landowners wishes but you can read more about this find in the article "VC40 County first and notable finds" (page 16).

A quick resume of the Shropshire three:

Gentiana pneumonanthe

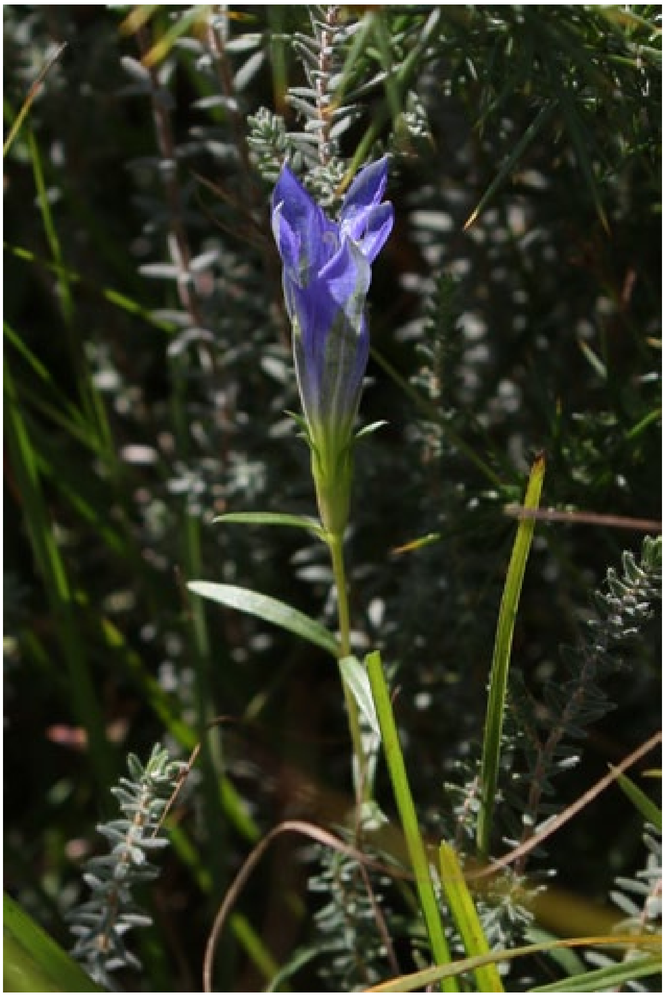

Photo 1 *Gentiana pneumonanthe* L. Marsh Gentian, by John Martin

G. pneumonanthe occurs throughout much of Europe from Southern Scandinavia to the mountains of Spain and Portugal, Italy and the Balkans, eastwards to Siberia and central Asia but is uncommon in the England and Wales and does not occur in Scotland or Ireland. *G. pneumonanthe* is Nationally Scarce[1] and is listed as Near Threatened on both England (Stroh *et al*, 2014) and Great Britain (BSBI, revised 2021) Vascular Plant Red Lists.

The BSBI Handbook describes *G. pneumonanthe* as easily distinguished from all the other gentians by the tall, leafy stems with numerous, narrow, one-veined leaves and the large blue flowers. Habitat will also give some clues being a species of damp acidic heathland, grasslands and transitions into mires.

It has always been very restricted in Shropshire, occurring only at Cramer Gutter, a Shropshire Wildlife Trust Reserve since 1988 near Catherton Common. The only other locality was a solitary record from Llanymynech in 1829, derived from a specimen found in the Cambridge University Herbarium labelled from 'Llanymynach, Shropshire' (recorder unknown), within the grid square SJ2621.

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[1] Rare - species recorded in 15 or fewer hectads in GB 2000-2019; scarce - species recorded in 16-100 hectads in GB 2000-2019. Data https://plantatlas2020.org/atlas

Fiona Gomersall gave a full account of the species at Cramer Gutter in "The Marsh Gentians of Cramer Gutter" in the Shropshire Botanical Society Newsletter No. 36, Spring 2018. Fiona's article describes the wet heath and mire habitats where the species is found, corresponding to National Vegetation Classification (NVC) types M15b *Scirpus cespitosa-Erica tetralix* wet heath and M21b *Narthecium ossifragum-Sphagnum papillosum* valley mire, *Vaccinium oxycoccos-Sphagnum recurvum* sub-community. Fiona also described the history of management and difficulties in achieving the right conditions for the species at this site. Flowering spikes are counted each year and have declined in abundance since the late 1990s, with the species now looking quite precarious at this reserve. As is usual for small isolated sites, it is hard to achieve the right levels of grazing and suitable methods for controlling gorse. Added to this there are the effects of historic drainage on the hydrology, and the additional current issues of nitrogen enrichment and climate change to contend with.

G. pneumonanthe has declined dramatically especially in lowland England, since the 1930s due to afforestation, heathland reclamation and drainage, summarized on the BSBI Plant Atlas 2020. Unfortunately there is a continuing national decline which is cited as being due to a lack of management. *G. pneumonanthe* is locally more frequent in South Hampshire and Dorset, perhaps because these counties still have extensive heathland and mire complexes, for example the New Forest, with more intact hydrological systems and opportunities for colonization and recruitment. Recruitment success (seed production and seed set) was higher in larger populations in a study in the Netherlands (Oostermeijer *et al*, 2008). In this study, other important factors were the presence of other insect-pollinated species and concentrations of specific nutrients in the soil. For very small populations, the authors recommended small-scale sod cutting around the remaining reproductive individuals, which simultaneously allows germination and seedling establishment of *G. pneumonanthe*, removes soil nutrients, and restores the cover of pollinator-attracting heath species at the cost of grasses. For valued county rarities this level of intervention is unfortunately necessary until such time as opportunities for larger scale recovery arise.

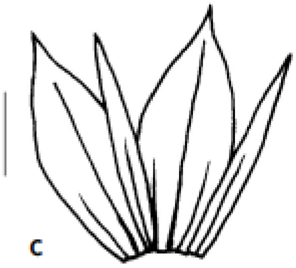
Photo 2 *Gentianella campestris* (L.) Börner Field Gentian, by Kat White

Gentianella campestris

This species is a European endemic, widespread in northern Europe to (including Iceland) and the central European mountains, the Pyrenees and Apennines. Although it is not a nationally rare or scarce species being widely distributed in Britain, *G. campestris* is Endangered in England and Vulnerable at GB level due to historic and continuing decline, especially in southern England. Declines are also apparent on the continent and are summarized in Plant Atlas 2020 as largely a consequence of undergrazing or neglect of pasture, and occasionally overgrazing.

The *G. campestris* is a species of open short swards on free-draining, somewhat, but not always, base-rich soils, a pattern which is reflected in the Shropshire distribution. In Shropshire the species has been recorded on the Carboniferous limestone of Wenlock Edge, Benthall Edge and Llynclys but also at other localities with more acidic superficial deposits such as Catherton Common, the Stiperstones area, and historically the Long Mynd and Wyre Forest. All localities were thought to have lost the species but Kat's find this year shows how it is worth checking previously known sites, and even new sites which might be suitable for natural colonization.

The BSBI Handbook describes the highly characteristic calyx that will "immediately differentiate it from all other Gentians in Britain and Ireland". The calyx has 2 large, broad lobes and 2(–3) small, narrow lobes which is illustrated in the handbook (Fig. 83c, scale bar is 1cm):



G. campestris is normally biennial, germination occurring in the spring and it forms a rosette during the first summer, which then dies back in autumn, and the following year aerial stems are produced which flower in July or August. *G. campestris* was split into two species by Murbeck (1892); the biennial *G. campestris* sensu stricto, and the annual *G. baltica*, now usually treated as subspecies as there does not seem to be any consistent morphological differences in Britain and Ireland.

Photo 3 *Gentianella amarella* (L.) Börner Autumn Gentian or Autumn Felwort, by Alex Prendergast

Grazing and mowing will help retain the short sward and open conditions the species requires but continuous grazing or mowing in midsummer and autumn would prevent most flowering and seed production. The bitter taste gives it some protection from light grazing and if minor damage does occur it is able to put on new growth of branches and produce flowers if it is given another opportunity. Studies in Scandinavia have shown that a traditional hay cut with aftermath grazing provides the flowering, seed set and subsequent germination opportunities whilst keeping nutrient and litter levels low and suppressing competition from grasses (Lennartsson, 2001).

Gentianella amarella

Gentianella amarella is neither nationally rare nor scarce and is listed as threat status Near Threatened in England and Least Concern in GB. Despite declines especially in the lowland regions due to loss of habitat through agricultural intensification and lack of management, it remains locally common in its strongholds in chalk and limestone grassland in southern and northern Britain. It is, now at least with the decline in Field Gentian, the most widespread of the three Gentians to occur in Shropshire.

G. amarella is a variable plant, and recent taxonomic revisions now recognize four subspecies which are treated separately in Stace (4th Edition, 2019), the BSBI Handbook and the PlantAtlas2020:

subsp. *amarella* Autumn Felwort

subsp. *septentrionalis* Northern Felwort

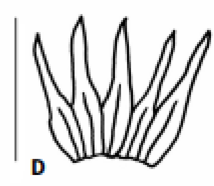
subsp. *anglica* Early Gentian

subsp. *occidentalis* Dune Gentian

The most widespread species is *G. amarella* subsp. *amarella*, (the only species that is recognized to occur in Shropshire) which now incorporates the formerly recognized subsp. *hibernica*.

G. amarella populations are variable in colour usually bluish-purple, sometimes dark purple, sometimes more pinkish-purple or less frequently white albino forms.

The calyx lobes are only slightly different in size which contrasts markedly to the uneven lobes of *G. campestris*, as the diagram from the handbook shows, Fig 107 D. *G. amarella* subsp. *amarella*, calyx, with scale bar 1cm:



G. amarella can grow in the same places as *G. campestris* (this overlap does not happen in Shropshire but may have done historically) on calcareous, freely drained, nutrient-poor soils, in short, open grassland on chalk and limestone and in quarries.

G. amarella was described as 'stable' in Shropshire, (Lockton and Whild, 2015) and associated with the NVC communities CG2 *Festuca ovina-Avenula pratensis* grassland, and CG7 *Festuca ovina-Hieracium pilosella-Thymus praecox/pulegioides* grassland. It can be found on Benthall and Wenlock, Llynclys and Llanymynech and there are some older records from the south east of the county near Oreton, Clee Hill and Caynham. It was not considered one of Shropshire rare plants in 2005, and I hope that when it comes to re-analysing the data for the review of the Rare Plant list for VC40 it still doesn't qualify for this dubious accolade.

If you are lucky enough to come across any of these species, as always submit your records to iRecord, with photos of the important characters, please don't be tempted to make herbarium specimens, it is unlikely to be necessary for identification and would deplete the precious resource. Good luck!

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VC40 County firsts and notable records in 2023

Mags Cousins and John Martin

There have been a number of remarkable finds in 2023 from our members and some prolific recording by members and visitors alike. Jonathan Shanklin (BSBI Field Meeting Secretary and VC29 Cambridgeshire Recorder) has clearly been inspired by the concept of 'Shanklins' (a term coined by Alex Lockton for under recorded monads) and continues to add to our records every time he travels this way, completing monads, and also taking any opportunity he can to make records including when stuck in traffic at roadside verges and laybys. This inevitably leads to new squares for native and introduced species, ones considered widespread and common elsewhere in GB but yet to have become so in Shropshire. There are too many new squares from John and others to mention all of them here, but a few examples are below.

Whilst recording monad SO3587, near Totterton Jonathan found Fig-leaved Goosefoot *Chenopodium ficifolium*, which is a new 10km square for this species. It was previously considered a rare archaeophyte on waste ground and roadsides in Shropshire but was noted as increasing in the Flora and Vegetation of Shropshire (Lockton and Whild, 2015). On a nice verge, in the same monad, was a good stand of Fragrant Agrimony *Agrimonia procera* which is relatively scarce, and/or under-recorded in Shropshire. Also present was Peach-leaved Bellflower *Campanula persicifolia* a naturalized garden escape and a new 10km square for this species in VC40. On another occasion at Mount Gutter Pond, near Aston on Clun Jonathan found Curly Waterweed *Lagarosiphon major*, which is another new 10km square for this introduced aquatic which can become very abundant and outcompete native aquatic macrophytes.

Mark Duffell found the beautiful grass Loose Silky-bent *Apera spica-venti* (photo 1) when surveying at Dothill Local Nature Reserve, this September. This annual species is thought to be an ancient introduction, possibly declining nationally and associated with open habitats especially arable field margins. It has always been rare in Shropshire, with only three previous records in total, the last being in 2006 by Clive Stace and Sarah Whild at Knockin Heath. Elsewhere at the same site Mark also found a ruck of bird seed aliens, including the following rather beautiful grasses: Canary Grass *Phalaris canariensis*; Hairy Finger-grass *Digitaria sanguinalis* which is a new county record (photo 2); Common Millet *Panicum miliaceum* a new 10km square and Cockspur *Echinochloa crus-galli*, also a new 10km square. There are a few records for this species across Shropshire already and we also found it on an arable field edge on the BSBI Recorders' day at Onslow Estate in October. The Estate sow mixes for bird seed and this species was persisting by the fence line.

Another introduced grass species Yellow Bristle-grass *Setaria pumila* (Poir.) Roem. & Schult. has been recorded three times this year, by Mark at Dothill; by John Martin at Venus Pool, the Shropshire Ornithological Society bird reserve where it seemed to be spreading; and also in Shrewsbury during a BSBI Recorders' urban botany outing in October. It has been recorded before in Shrewsbury, probably also from bird seed. This annual grass, originating from the Mediterranean area, had already been recorded in England by 1805 and seems to be able to spread naturally here.

The BSBI Recorders' urban botany outing to Copthorne, Shrewsbury on 8th October netted an impressive 220 taxa with a large haul of pavement weeds and other aliens. Most odd was a fine tree of Wild Pear *Pyrus pyraster* (photo 3) which is an archaeophyte-denizen; denizen meaning having the appearance of being native or fully naturalized but with some suspicion of having been originally introduced. The tree had been grafted with Plymouth Pear *Pyrus cordata* which had tiny Rowan berry sized brown fruits. Plymouth Pear is treated by some as native to Cornwall, or it could be an ancient introduction. The two smaller adjacent Pears were also *P. cordata* which were evidently planted but of interest nonetheless. Obviously someone in Shropshire Council was keen on fruit trees when the street planting was happening.

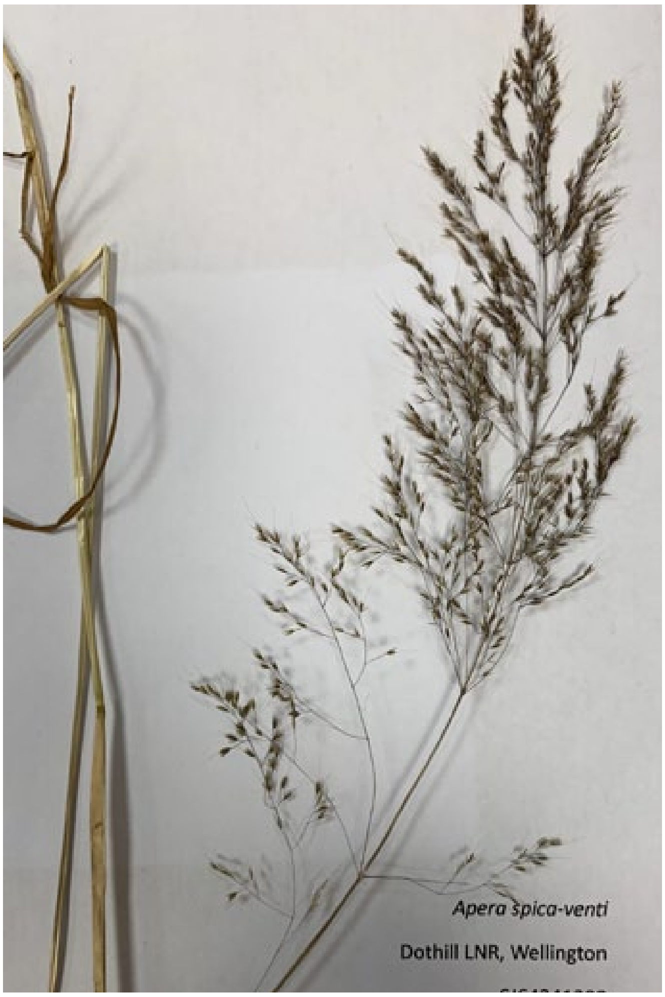

Photo 1 Loose Silky-bent *Apera spica-venti*, from Dothill Nature Reserve, photo of Mark Duffell's herbarium specimen by Mags Cousins

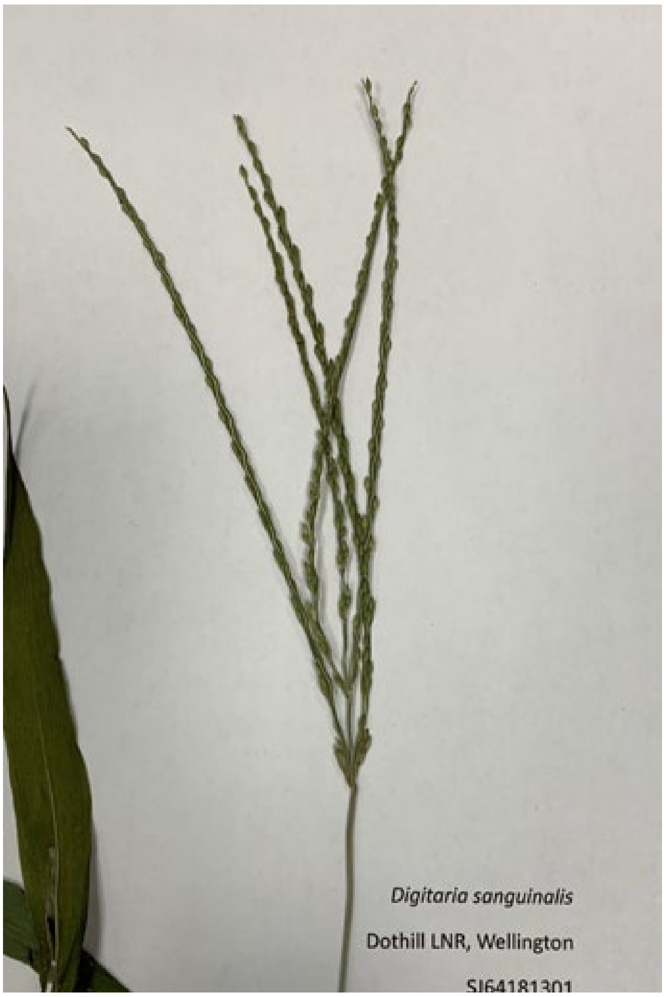

Photo 2 Hairy Finger-grass *Digitaria sanguinalis*, from Dothill Nature Reserve, photo of Mark Duffell's herbarium specimen by Mags Cousins

The team of botanists also found Common Broomrape *Orobanche minor* var. *compositarum* growing on Brachyglottis "Sunshine" an evergreen shrub in the Asteraceae - this was not a new find for *O.minor* as it has been seen in the same spot by our own Dan Wrench and Sarah Whild. However we have not had it identified down to var. *compositarum* before, which is on the basis of suberect, subglabrous corollas 3.5–5mm wide. New county records that day were Annual Clary *Salvia viridis* and Glaucous Fescue *Festuca glauca*, both of which were no doubt garden escapes to pavement life. The team also made only the third record for VC40 for New Zealand Bitter-cress *Cardamine corymbosa*. This latter species probably arrived at a garden as a weed of a container plant, possibly from Dobbies Garden Centre where Tim Rich spotted it in 2019, and then it subsequently managed to escape from the pot plant's new home and establish itself on the pavement.

We don't normally record non-native plants in gardens, or weeds of container plants but sometimes it is worth noting, as this knowledge can help understand the spread of non-natives. It goes without saying, always be careful with your biosecurity, cleaning footwear and equipment before going to new sites and be aware of what might be in your pot plant purchases!

In another first for VC40, Olga Krylova found the introduced Duckweed, *Lemna valdiviana* in a pond at Onslow Park on 8th October, and Mark has had it confirmed from buckets in his garden where he keeps introduced aquatics for teaching purposes. Mark reports that it had been there for a number of years "looking decidedly odd", for good reason it would seem. The species is characterized by the two pairs of fronds appearing like a butterfly - one large pair, one small pair, see photo 4a. Photo 4b shows how the species can hide in plain sight, amongst native Duckweeds, so do keep a look out and send good close up photos to Richard Lansdown the National Referee for aquatics to: rvlansdown@gmail.com, with all the usual details for a record.

Photo 3 Wild Pear *Pyrus pyraster* with graft of Plymouth Pear *Pyrus cordata* - two unusual pears in one, Copthorne, Shrewsbury by John Martin

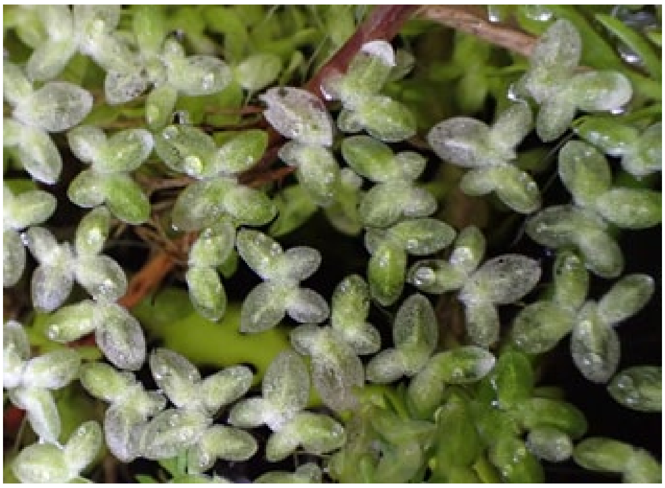

Photo 4a *Lemna valdiviana*, an introduced Duckweed, giving the appearance of a butterfly with two large and two small fronds, by Mark Duffell.

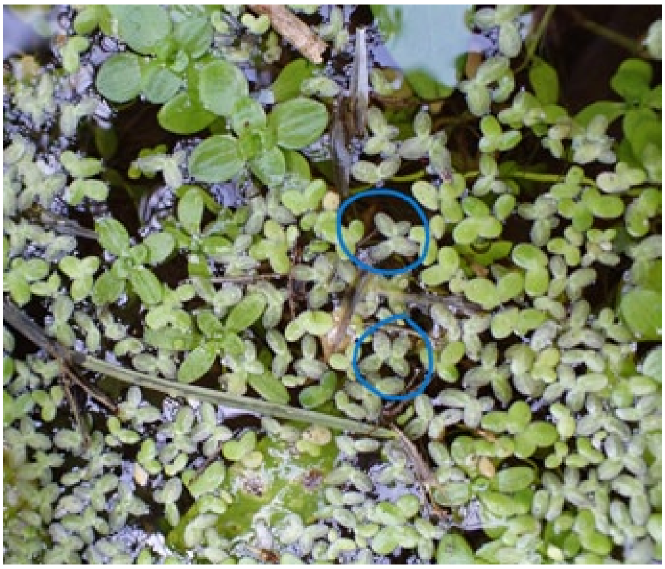

Photo 4b *Lemna valdiviana* circled, hiding in plain sight, from a pool in Onslow Park, photo by Mark Duffell.

John Martin is still recording plants on a weekly basis during entomology field trips and over the summer this soon built up into an impressive contribution. A trip to Condover Quarry in September yielded a good population of Narrow-leaved Bird's-foot-trefoil *Lotus tenuis* (photos 5, 6) and Annual Beard-grass *Polypogon monspeliensis* (front cover). There are few records for these species in VC40 and Condover is a new 10km square for both. Interestingly *L. tenuis* reaches its altitudinal limit at 375m at The Bog, Stiperstones but overall shows a preference for coastal grazing marshes and estuarine clays in Britain, as does *P. monspeliensis,* but both are spreading inland alongside roads and trackways and evidently in dampish parts of quarries.

Leaving the best to last perhaps, the star finds of 2023 are two re-discoveries of species thought to be extinct in Shropshire.

Lucy Watts made a good species list for Snailbeach Lead Mine in late May this year, including Mossy Saxifrage *Saxifraga hypnoides* (photo 7). It is commonly grown in gardens, but from Lucy's photos the plant does indeed look plausibly wild, probably not planted and looking quite happy. There are very few records for Shropshire, the first record being on Titterstone Clee in 1803 by Joseph Babington but there have been no positive sightings here since 1871. The last record in Shropshire was probably a garden escape in Boningale in 1979 (Mr B Fowler) which did not persist. It has never been recorded before at Snailbeach but the spoil heaps offer suitable free draining, and yet moist rocks and scree slopes, with an upland character. It

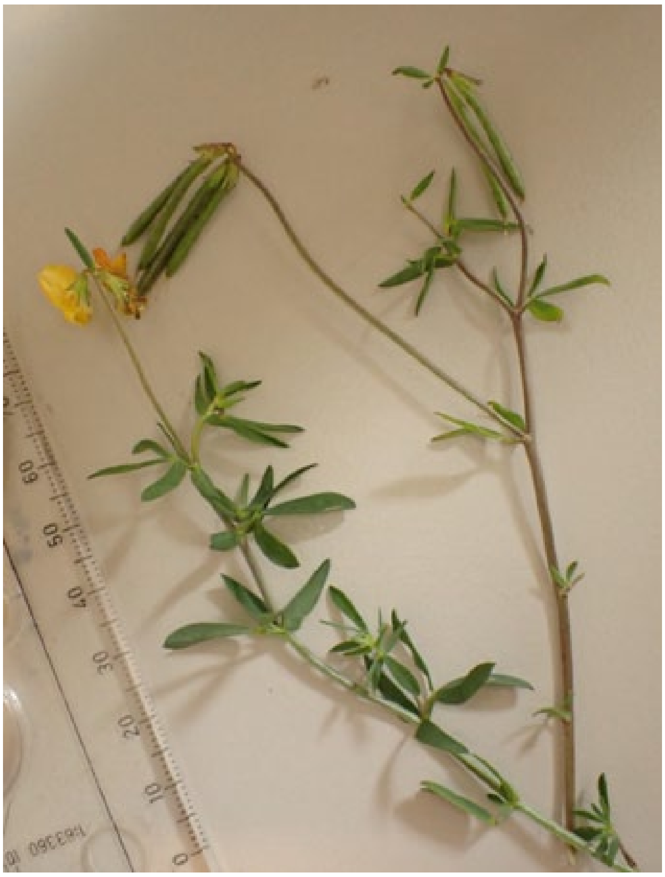

Photo 5 Narrow-leaved Bird's-foot-trefoil *Lotus tenuis*, from Condover Quarry, showing the pointed sepals and narrow leaflets, by John Martin

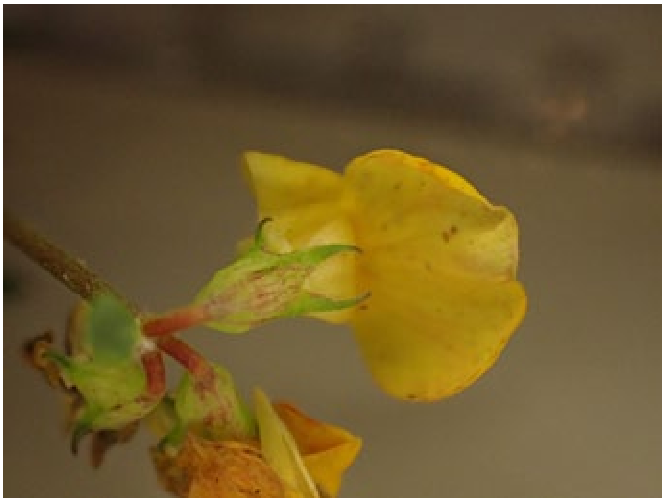

Photo 6 Narrow-leaved Bird's-foot-trefoil *Lotus tenuis*, from Condover Quarry, showing the converging sepal tips, by John Martin

is regarded as threat status Vulnerable on the GB Red List (BSBI, 2021) with a slight declining trend and may be an upland plant that will be affected by climate change. Also at Snailbeach was Crimson Clover *Trifolium incarnatum* subsp. *incarnatum*, an uncommon casual in VC40 and a new 10km square for this species (photo 8). This likely originates from a seed mix sown a few years ago near the car park.

Photo 7 Mossy Saxifrage *Saxifraga hypnoides*, discovered at Snailbeach, by Lucy Watts

Kat White came across Field Gentian *Gentianella campestris* (photo 9) which was due to a serendipitous contact with a mutual friend and a subsequent visit to a privately owned piece of land. Of the three Gentian species in Shropshire (see Gentians of Shropshire, page 12) Field Gentian had declined the most and with the last record being in 1987 was presumed extinct from the county. What a delight to find the land in question held a very good population of *G. campestris*, with a sympathetic land owner, who doesn't want to be bothered by eager naturalists so we are not revealing the location. It turns out, that this is a previously known site for the species, which is all the more remarkable for its constancy and persistence. There is hope out there for our native flora, so keep those eyes peeled and lenses at the ready.

Thank you to everyone for continuing to paint a picture of our ever changing and sometimes remarkably consistent flora in Shropshire.

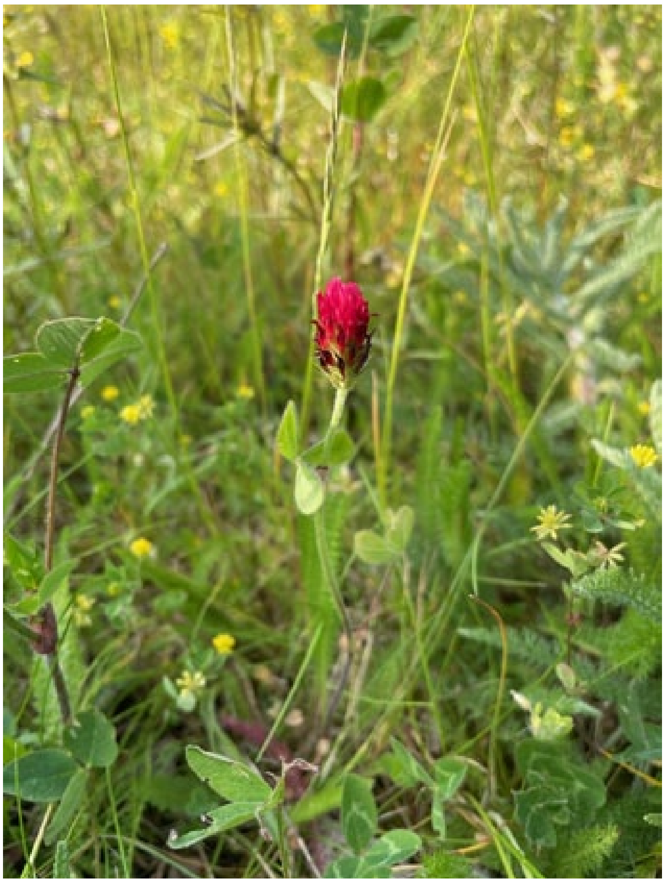

Photo 8 Crimson Clover *Trifolium incarnatum* subsp. *incarnatum*, at Snailbeach, by Lucy Watts

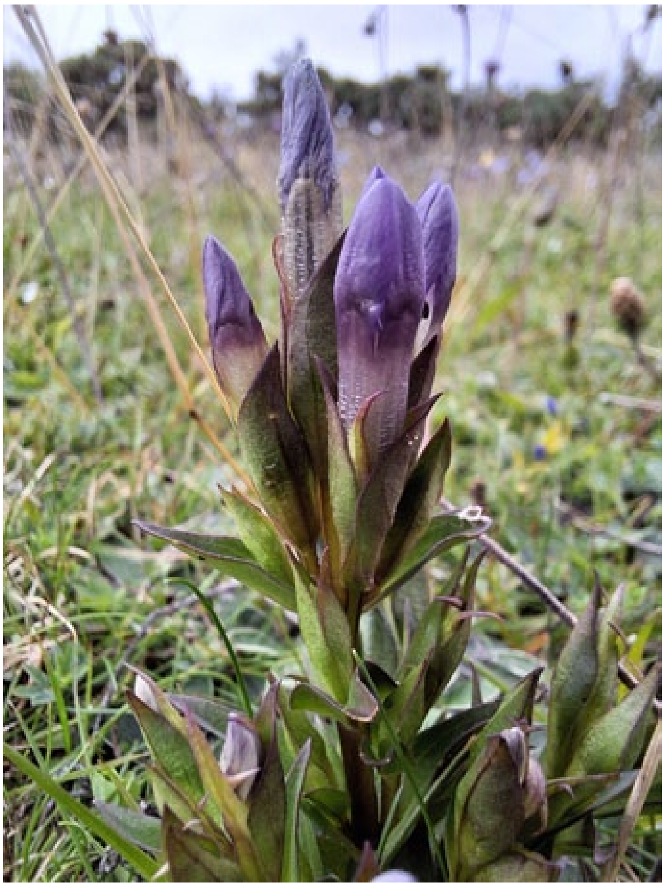

Photo 9 Field Gentian *Gentianella campestris*, a glorious rediscovery in VC40, by Kat White

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Botany in Shropshire: Changes for a sustainable future

Eric Steer

The Shropshire Botanical Society asked if I would put my thoughts down about the future of plants in Shropshire, and what I felt were the obstacles to restoring Shropshire's plant populations.

As a relatively new person to Shropshire, I recall my excitement of the summer of 2002 when I had my first long walks in the south Shropshire countryside. Excitedly, I cast my eye over the hedges and through the gates at the land to see what was going on and my understanding of what was happening began. That excitement has not dimmed but my understanding and expectations have changed.

Meadows, Eric and Mary Steer

Regulation

Protecting wildlife sites works most of the time, for the site, but as I tell anyone who will listen, SSSIs are a just a representative series of sites. They were not brought about to protect the totality of our nature conservation heritage. SSSIs are not even there to protect wildlife and geological features that meet a certain set of criteria (except in a few limited cases). SSSIs are simply a small number of examples of our natural heritage with powers to protect and manage them.

Locally important sites are different. They are a threshold series of sites. All sites meeting a certain, local, level of interest are candidates for the acknowledgement that they are locally important. This gives some, very limited, protection and incentives for their positive management.

Where is this line of thought going? Well, the first big message is a cautionary one. From my experience I do not believe that we can enforce our way to a sustainable future for the plants of Shropshire, or any of its other natural heritage. In the 30 + years I have worked in nature conservation I have not met anyone who wanted to destroy our natural heritage for the sake of it. The loss of our natural heritage is because people have their own higher priorities that can directly or indirectly lead to the loss of our natural heritage and change the forces that shape and power our natural environment. Undoubtedly there is a role for regulation, protection, and incentives for the positive management of heritage sites but to see a big change we need to consider other ways of doing things. I would like to see the natural environment, and our natural heritage, given greater priority in decisions about the way we use the natural environment.

How we value the world around us - education

Recently I was out monitoring a Shropshire Wildlife Trust site when I came across a school party of some 40 children running around the slopes of the Hollies on the northern end of the Stiperstones. Their excitement as they ran around pointing out flowers and insects to their teachers and assistants was a joy to see. Getting out and about into Shropshire's countryside, and urban green spaces, and understanding how plants, animals and fungi interact in life's complicated webs, brings with it an appreciation of the importance of all life in our global biome. Understanding how that web of interactions work is important, it allows us to appreciate the impacts we may have on it and how we are so dependent upon it. The opportunity to experience this learning, for all ages, is the beginning of each person's understanding about how they value our natural heritage. This is about people and each person's values about the world around them.

The powers that shape things

The physical processes that underpin biology are of fundamental importance. This is not just

Jonathan's Hollow, Long Mynd, Eric and Mary Steer.

about land management, as important as that is for shaping the plant and animal assemblages that live there. I am, here, highlighting the physical and chemical interactions that drive life. Previous generations have highlighted this when they voice concerns with the issues of the day, Silent spring, acid rain, the limits to growth debate, ozone holes, and climate change. All these reside in a part of my mind under the heading "global commons". There is a great deal of commentary about how to manage and use common goods. Our land, sea and air and their life supporting capacity being unhindered by pollution is something we need to ensure. All this is about the science of our environment, our understanding of the physical and chemical interactions and our cultural approach to the world we live on.

The thoughts that change things

Many of these physical processes channel billions/trillions of single events that add up to large scale change. The idea that many little things lead to big changes needs more airtime. We need to appreciate that the small things we do make a difference. I think the best way to make this happen is to make the sustainable thing to do, the easy thing to do.

More thoughts that change things

So far, I have highlighted the role of regulation, the important role of education about our natural environment, the biological and physical networks and processors that support life on earth. Lastly an example of a way of seeing things differently, personal change. Seeing things differently is perhaps the most important change that I think is needed. I have described how small things in large numbers lead to big changes (pesticides, ozone holes, climate change etc.) but there are other ideas we need to develop new insights for, if we are to make big changes.

Cooperation v competition

Cooperation and competition are a pair of ideas that are much closer to one another than I first imagined. Brought into ecology at university in the 1980s was the time to read Richard Dawkins books on the selfish gene and extended phenotype. I was sceptical about ideas for community ecology and the role of phytosociological communities including the national vegetation classification (NVC). I now think I understand the role of NVC and believe it is a valid one. Watching these two ideas, cooperation v competition, roll around in

Mire at Catherton Common, Eric and Mary Steer

my mind, I now see how close they are as ideas. One only has to read the work by Suzanne Simard and her book "Finding the Mother Tree" or listen to talk by economists/mathematicians about non-zero-sum solutions to problems to see how cooperation does much of the role competition does. At a land management level there is a need to find ways to cooperate, so land management is just as beneficial to our natural heritage and the life support systems I discuss above.

Evidence and our botanical heritage

I'm a bit of a "butterfly" when it comes to natural history. My love is ancient/ semi natural woodlands, and this often arches over the various groups of plants, animals and protozoa I study (my recent love for slime moulds (Myxomycetes) is a lonely one). Lichens are one of my new interests since I left work some six years ago. At that time there were 8,000 records for lichens in Shropshire (VC40). Most (4,000) were from church yards, 2,000 from a handful of well-known sites and 2,000 for most of the rest of the county. So, with Mary, my wife, we set about getting a feel for the lichens of Shropshire. Distribution was a relatively easy idea to crack, we just went everywhere we could. However there appears to be no known method for assessing abundance. My ecology training said populations were defined by their abundance and distribution. My experience monitoring the Shropshire Wildlife Trust sites encountered the same problem. When we describe the changes to the site, their condition, we use quadrats to describe the abundance (a modified Domin scale where 1–3 are grouped). We do this to show incremental changes to the vegetation. So, my plea to the botanical society is to come up with a system to measure populations, i.e., abundance and distribution. My concern is that estimating populations, and changes in populations, on distribution alone, may underestimate change. In the words of a colleague at work, "who's concerned about keeping the common, common".

Regulation of the global commons

The role of regulation is important. The world's struggle with climate change is not the first global environmental problem requiring coordinated action. Our (peoples) track record is mixed. On the positive side we have the banning of CFCs to protect the ozone layer. Pesticide regulation is less coordinated but there are international forums/

bodies that set standards which nations take seriously. The international acknowledgement that NOx and SOx emissions can have transnational impacts (acid rain) is the accepted norm. I understand less about international agreements on water use but there are agreements. Our global life support systems need global cooperation, nation states need to work together, perhaps with the help and support of other global institutions but what makes our global systems work, impacts every wildflower meadow.

Actions

If you share my thoughts, then the next steps are to consider how you can help shape the world around you so together we can restore our botanical (and more generally our environmental) heritage.

Recording

I have already suggested one way to start that change. Consider the issue of how to record abundance so populations of things are recorded in a way change is detected better. I believe this is important for the evidence base of environmental change.

Education

The "ways of thinking" change needs us all to become educators and influences. The Botanical Society, its members, you, need to give future generations a chance to see and understand how the natural world around them works. I believe young children's enthusiasm is already waiting to be engaged. Why not have a young person (up to 7, 7–10?) group. Ask members to have a parents/grandparents walk in the fields, hills, and woods of Shropshire. Perhaps a flower hunt where young people can enjoy, learn, and understand not only plants but how the natural environment works. Perhaps even grow plants from seed, who can resist wanting to grow mighty oak trees from those small green/brown acorns.

On the wider issue of influencing, the roll out of the new GCSE needs your help. Ask the Botanical Societies members to offer their considerable local knowledge and experience to help the teachers of Shropshire's children. Teachers and assistants would welcome your help to identify plants and explain how they grow.

Urgency

The changes that are shaping our natural environment right now are the result of actions taken months, years or even centuries ago. I do not think resolving how we use the environment sustainably can wait for a more enlightened time that future generations will deliver. We should ensure that the natural environment we leave for future generations is in a better state than what we found it in. That means being a recorder, educator, and influencer. The last of these does mean becoming involved in decisions about how the environment is used. Land management plans should protect and manage the environment and leave the natural environment in better shape during its implementation. The Shropshire Botanical Society needs to use its knowledge about the natural environment in Shropshire to influence plans and decisions on the use of Shropshire's land, air, and water. Talk to your local councillors and MPs, write articles for papers, set up social media accounts on botany in Shropshire. Let people know what is happening to the botany of Shropshire.

Summary

From my early years in Shropshire looking over hedgerows and field gates to 20+ years of getting to know the county, I realise the wildflower meadow we see is wrapped in layers of decisions out-with the management of the field. The main obstacles to improving our botanical heritage are not simply the management of fields. From education to long range pollution, the fields we care about are the result of their context, their wider physical drivers, and our cultural values. If the improvements we want to happen are to happen, I believe there is a need for all these issues to be addressed.